DOCUMENT RESUME

ED 165 569 HE 010 815

AUTHOR Nediger, W. G.
TITLE Identification of Relative Power Amongst Faculties in Universities.
PUB DATE 13 Sep 78
NOTE 31p.; Not available in hard copy due to marginal legibility of original document; Paper presented at the Fourth General Conference of the Centre for Educational Research and Innovation, OECD, "Managing Universities in the 80's" (September 11-13, 1978)

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Budgets; *College Faculty; Educational Planning; Foreign Countries; *Governance; Higher Education; Interaction Process Analysis; *Interprofessional Relationship; *Organizational Climate; Policy Formation; *Power Structure; School Organization; Teacher Administrator Relationship
IDENTIFIERS Academic Planning; *Canada; *Faculty College Relationship

ABSTRACT

Studies on the identification of power bases within five Canadian universities were designed to develop a utility function for each sub-unit that will generate a series of power rankings. The unit of study is the faculty, and the tool is designed to identify the relative power of separate faculties and various combinations of faculties. Two power indices concerning budgetary allocation and academic policy-making are analyzed in this process. Five assumptions that form the basis for the derivation of the utility functions and power rankings are presented. The assumptions concern the external environment that affects the faculty, interaction with other faculties, and the formal governance structure. Faculty power is assessed by the Total System Interface Ranking and various power rankings with respect to policies concerning budgets, academic matters, and planning. The factors making up the Total System Interface Rank are the faculty's share of the university's inputs, the degree of constraint on the faculty exercised by outside agencies, the faculty's share of the university's outputs, and the type of interactions the faculty has with other faculties. Tables are presented for two of the universities on external interface relationships, committee structure, and internal interface relationships. External interface factors involve eight inputs, 10 constraints, and six outputs. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED165569

A E

IDENTIFICATION OF RELATIVE POWER AMONGST FACULTIES IN UNIVERSITIES

Fourth General Conference

MANAGING UNIVERSITIES IN THE 80'S

Centre for Educational Research and Innovation

OECD

September 11-13, 1978

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

W. G. Nediger

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Professor W. G. Nediger

The University of Western Ontario
London, Canada

H6010815

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

IDENTIFICATION OF RELATIVE POWER AMONGST FACULTIES IN UNIVERSITIES

W. G. Nediger
The University of Western Ontario
London, Canada

ABSTRACT

This work is a report of studies done at five Canadian universities designed to test an analytic technique which enables the researcher to develop a utility function for each faculty in an institution. This function in turn provides a tool for the identification of two power indices, one with respect to influence in the area of budgetary allocation, the other with respect to influence in academic policy making. Senior management is thus able to identify the relative power of separate faculties and various combinations of faculties.

INTRODUCTION

During a period of tightening budgets, decreasing enrollments, and declining mobility of faculty members, the ability of an academic unit - Department, Faculty, or College - to control its internal environment within the university becomes increasingly important. Ability to control the internal processes of an organization is the essence of power. The senior management is charged with co-ordinating and controlling the various sub-units within the organization. It follows that the minimal criteria for effective control is the identification and manipulation of the power of the various sub-units. This paper presents an empirical study of the identification of power within five universities in Canada.

Richman and Farmer (7) claim that most universities and colleges are seriously mismanaged and the cause of this is:

> "the nature of their goals, ambiguities relating to power and authority, financial constraints, and the kinds of professionals that work for academic institutions." (7, page IX)

On the contrary Rice (6, page 3) states:

> "I cannot believe that the many elite men and women who staff and manage universities of the world could have allowed the present situation to arise were it not for the existence of very powerful, but unrecognized, social forces that inhibit change and maintain chaos."

Whether or not one agrees with the mismanagement hypothesis of Richman and Farmer or the more positive hypothesis of Rice, the critical notion to be drawn from the above quotes is the fact that management of an university is made more complex by the "ambiguities relating to power".

A proper understanding of the power relationship can only be attained through an examination of models of the governing structure of the institution.

The traditional bureaucratic model sets forth a well-defined authority structure and clearly specified objectives for the organization. The upheavals amongst students and faculty members that took place in the '60's can be credited with shaking the last vestiges of the bureaucratic model from the organization charts of our universities. Perhaps it is unfair to credit the upheavals of the '60's for this. The Chancellor of the University of Paris in 1218 is quoted in Moodie and Eustace (3, page 11) as follows:

> "In the old days, when ... the name of Universities was unknown, lectures ... were more frequent and there was more zeal for study. But now that you are invited into a University lectures are rare, things are hurried and little is learned, the time taken for lectures being spent in Meetings and discussions."

However, regardless of when the lament is made times have changed. Baldrige (1) describes three organizational models for universities. The first is the bureaucratic as described above. Replacing it, in his mind, is the collegial model. This model with its decision making through consultation rather that recourse to formal authority has appeal to many academics. Unfortunately, academics are human, when resources become more and more constrained the consultation and collegial goodwill breaks down. It is then that the third, the political model is based on the premise that there is conflict inherent in all organizations. The degree of conflict varies directly as the environment is more constrained. Decision making can be viewed as the forming of coalitions. The basic criterion for the forming of the coalitions is the degree to which a particular group has power to apply to the specific conflict situation. Perrow (4) has pointed out that power amongst sub-units on the same level in the organization is emphasized in the political model.

Other authors have identified a similar basic development in the models of governance of universities. Moodie and Eustace (3) in their detailed work dealing with British universities have labelled the Baldridge models, with minor variations, and with typical British academic aplomb as oligarchic, democratic and republican respectively.

What appears to be the latest model is that described by Cohen and March (2) which they designate as "organized anarchy". The description and thus the term is a result of a detailed and extensive study of American institutions in the early 1970's. They include as the basic property ambiguity, that is, ambiguity of purpose, of technology, of power, of learning from experience, of the need for participation, and even of success. Although the work may be a true description of the authors' perceptions it does little to assist in overcoming the conflicts that are inevitable when the environment is characterized by severely constrained resources except, of course, that it gives us an understanding of the complexities of the organization.

An excellent discussion of the various models appears in Richman and Farmer (7). There appears to be a common theme throughout the models. In particular it is evident in the political and organized anarchy models. That element is the concern over power. If indeed it is ambiguous it behooves those interested in the management of universities to attempt to clarify some of that ambiguity.

Rice (6) takes the view that a university is a complex multiple-task enterprise, which must relate to a complex environment. The environment includes the local community, the areas from which students and faculty are drawn, the nation it serves, and the world of academe. In the more well-known institutions international relationships are also important. Due to the intricate and interrelated relationships of the above environmental publics the institution becomes extremely complex. No simple, single form of organization can be designed to accomodate all tasks. One approach to organizational analysis in universities uses the open system theory of organization. By so doing it is hoped that:

> "with more precise definition of the boundaries of activity systems, and of the boundary controls these entail, it will become possible to identify roles, responsibilities, and authorities more easily; and that with more sophisticated role behaviour, it will become possible to control transactions across the boundaries more effectively." (Rice, (6) page 5)

Thus this paper is an attempt to wed the Richman and Farmer (7) technique on open system analysis with that of Pfeffer and Salancik (5) and the hypothesis of Rice (6) to enable senior management to identify various power

bases in the university. The process that has resulted enables the researcher to develop a utility function for each sub-unit from which can be derived a series of power rankings. The results provide a tool for inter-group bargaining and may allow senior management to manipulate various combinations of sub-units for varying purposes. It thus also becomes an organizational development intervention technique.

Unlike in Pfeffer and Salancik (5) the unit of study in this work is that of the faculty rather than the department. In the experience of the researcher the faculty unit is found to be relatively cohesive and in many cases, especially in the professional faculties, not organized on the traditional departmental lines. It is also the faculty that is the fundamental budgetary unit. Thus it is the unit of analysis.

In that one of the values of the process is the forcing of the faculty deans to become more cognizant of their goals, resources and environments (both internal and external) it was decided that the interview should play a significant role in the research. Even though, to quote Pfeffer and Salancik (5, page 137)

> "asking persons the criteria they use for decisions may provide misleading results because the persons will tell the reseacher what they think he wants to hear or what is normatively valued",

it was found, as was admitted by many who were interviewed, to be a worthwhile activity.

The data were gathered during the summers of 1976, 1977 and 1978. During the latter two years the research was supported by a grant from the Ivey Foundation of London, Ontario through the Association of Universities and College of Canada to the Faculty of Business Administration of The University of Western Ontario.

The principal researcher had been closely associated with senior administration of an Ontario university for a number of years. It was through this association that the interest arose in this area of research. During the summer of 1976 the opportunity arose to attempt to apply the two models to university A. The historical data were readily available. The subjective data were obtained in part through informal discussion with the various deans or assistants and in part by drawing on the researcher's knowledge of actions and interactions over the past five years. Admittedly. these were extremely subjective. The correlations as shown in Figure D for University A may well reflect the subjectivity of the non-historical data and the way in which they were gathered. This

suggested that future research in this area should be conducted in a much more structured manner.(1) Thus the 1977 and 1978 work at Universities B, C, D, and E included a highly structured interview and was not hampered by an over-familiarity with the institution, its traditions and history. The correlations in Figure D for these Universities suggest that this was a significant improvement in the methodology.

It should be noted that this work extends both the Pfeffer and Salancik (5) and the Richman and Farmer (7) work by providing a power ranking for academic policy decisions and university planning decisions as well as for budgetary matters.

Measures of Power

Three broad areas were considered in analyzing the power of a faculty. These areas are directly related to the publics with which a faculty must cope. The first deals with the external environment. The latter two deal with the internal environment with the second taking into consideration relationships amongst all faculties and the third taking into account of relationships with the formal governance structure. Related to these three areas are five assumptions that provided the basis for data manipulation and the derivation of the utility functions and power rankings.

The following outlines the three areas mentioned above, the five assumptions and the factors taken into consideration.

1. External Environment

Assumption 1. The larger a faculty's share of the resources or inputs of the university, the greater is its power. Typical inputs are budgets, faculty and staff complements, space allocations, equipment and supplies allocations, student enrollment, and research revenue.

Assumption 2. The less a faculty is constrained by outside groups the greater is its power. Typical constraints are alumni, outside funding groups, educational systems such as in secondary school, local municipal groups,

(1) The process is presently being repeated more formally in University A with a view to overcoming this problem and to attempt to identify the impact of a dean of two year's standing in a particular faculty.

the job market for graduates, provincial, state and federal governments, professional societies, faculty unions or associations, staff unions or associations, and the central administration of the institution.

Assumption 3. The more a faculty is involved with the various outputs or goals of a university, the greater is its power. Typical outputs or goals are undergraduate and graduate degrees, service to the public at large, research publications, placements of praduates in jobs, and the maintainance of good working conditions for the members of the faculty.

2. Internal Environment - Other Faculties

Assumption 4. The more a faculty interacts with other faculties, especially powerful faculties, the greater is the faculty's power.

3. Internal Environment - Formal Governance Structure

Assumption 5. The larger a faculty's share of the membership and chairmanships of the significant university committees, the greater is its power. Typical significant committees are those dealing with budgets, planning, admissions, and academic policies. Other powerful committees might include the Executive Committee and the Nominating Committee (because of its control over committee membership) of the governing body or bodies of the university. The executive of the faculty and staff unions are becoming increasingly more powerful and might also be included.

The foregoing five assumptions lead to three measures of power.

Assumptions one, two and three give measure one; assumption four gives measure two, and assumption five gives measure three.

Measures one and two are then combined to yield a power ranking of faculties called the Total System Interface Ranking.

Measure three, developed from committee memberships, yields various power rankings of faculties with respect to policies in the areas of budgets, academic

matters, and planning. These reflect the faculty's power to control the setting of policies and priorities in these three key areas of university governance.

Methodology

The broad approach outlined above was first applied in 1976 to a university in Ontario - called University A. The technique was then refined and applied in 1977 and 1978 to universities in other parts of Canada - called Universities B, C, D, and E.

The Faculties considered were those that were consistent in make-up over the preceding 5 to 8 years. In some cases, Faculties had split or combined to form new units. The data were adjusted to take this into consideration.

Wherever possible, hard numerical data from university records were used. For those factors unsupported by hard data, qualitative assessments by Deans were obtained and transformed into numerical data (note the qualification as previously stated for University A.). Details on the definitions of the various inputs, constraints, and outputs appear in Figure F.

All of the data on Faculty inputs in Figures A1 through E1 were obtained by considering numerical data from university records for a 2 or 3 year period. The entries in the input matrix represent 10 times the Faculty's proportional share of the resource for the period of time under consideration. For example, if the total university budget over the 3 year period was $200 million and the Faculty of Engineering's share was $30 million, then 10 x 30/200 = 1.5 would be the entry in the Engineering row in the Budgets column. Most of the entries are between 0 and 2.

The data on Faculty constraints in Figure A1 through E1 were obtained through interviews with the Deans of the various Faculties. Each Dean was asked to rate on a scale of 0 - highly constrained to 2 - not constrained at all the degree to which he felt each factor constrained or inhibited his Faculty in its planning, decision making, and actions.

The data on undergraduate and graduate student output were obtained from university records of degrees awarded over a 2 or 3 year period. The research output data were obtained from university records on research activities and publications. These three entries in the output table were calculated in the same way as the input entries were calculated. The rest of the output entries were obtained through interviews with the Deans. Each Dean was asked to rate on a scale of 0 - unimportant to 2 - extremely important the emphasis or priority his Faculty placed on each

goal or output factor.

The entries in each row in Figures A1 through E1 were summed to give a Total External Interface Score for each Faculty. The ranking of the various Faculties is provided for comparative purposes.

To complete Figures A2 through E2, each Dean was questioned about the interaction of his Faculty with each of the other Faculties in the university. For University A, the Dean was asked if there was a substantial and sustained interaction or otherwise. For Universities B through E, the Dean was asked to rate the interaction as substantial, occasional, minimal, or none. These rankings were then reduced to a numerical scale - 0 or 1 for University A - 0,1,3, or 4 for University B through E. For each Faculty, the interaction ranking with another Faculty is multiplied by that other Faculty's Total External Interface Score. These products are then summed across each row to yield the Total System Interface Score and the corresponding ranking of the Faculties.

The Total System Interface Ranking should be an appropriate ranking of Faculty power since it reflects a Faculty's interaction with both the external and internal environments of the university (Measures 1 and 2 outlined earlier in this paper).

To test the appropriateness of the Total System Interface Ranking as a measure of relative Faculty power, several independent rankings of Faculties were obtained by considering Faculty membership on important university committees. Between 5 and 8 years of data were used. Committee chairmanships carries twice the weight of ordinary membership. For University A, only three committees were considered - a budget committee, an academic policy committee, and a committee concerned with planning the maintenance and expansion of the buildings, grounds, and physical plant of the university (Figure A3). On the basis of total membership representation over the time period, these committees yield respectively a budget rank, an academic rank, and a planning rank for each Faculty. They appear in Figure A4.

For University B, six different committees were examined and rankings of Faculties were obtained for each of these committees on the basis of membership over a period of years. The results appear in Figure B3. On the basis of numerical weightings suggested by the President and Vice-Presidents, these committees were weighted differently according to their influence in the setting of budgetary, academic, or planning policy. These weightings appear in Figure B4. In Figure B5, the weightings are multiplied by each Faculty's committee ranks to give a budget, academic, and planning score for each Faculty. These scores are then converted to rankings which also appear in Figure B5.

Evaluation of the Procedure

The rankings in Figure A4 through E5 appear to be reasonably consistent, although there are a few anomalies. It is indeed quite remarkable that the Total System Interface Ranking resembles the other three rankings, since they are derived from completely different data.

To test the correlation between the various ranking systems, correlation matrices were calculated for all universities using the Spearman Rank order technique, and appear in Figure G. The best correlations occur between the committee-derived rankings. Poorer correlations occur between the Total System Interface Ranking and the committee-derived rankings. The refinements used in the study of Universities B, C, D, and E yielded better correlations for all comparisons than were obtained for University A.

There is ample opportunity to question the appropriateness fo many of the individual numbers appearing in the data. However the system is sufficiently robust that it requires large numbers of significant changes in the data to materially alter the final power rankings.

Uses of the Procedure

The power rankings of Faculties are rather meningless by themselves. Rather, it is the procedure by which they are calculated that is most illuminating about how a university works. The fastest way to determine Faculty power rankings would probably be to look at the membership of important university committees. However the origins of Faculty membership representation on these committees lie in the various factors making up the Total System Interface Rank:

- The Faculty's share of the university's inputs
- the degree of constraint on the Faculty exercised by outside agencies
- the Faculty's share of the university's outputs
- the type of interactions the Faculty has with the other Faculties.

However, the power rankings may become meaningful if they lead to various coalitions of faculties to increase the stature of the university within the university system. Perhaps they might suggest combinations of faculties for developing degree programs that may indeed result in each faculty becoming more powerful within the academic community. This may be especially true with various professional

faculties.

Public institutions are likely to become much more rigidly constrained in the future. This suggests that flexibility may only be attained where external funding can be obtained. The process described includes a heavy weighting on the external factors. Greater power will accrue to those units that are able to successfully interact with the external world. If, as hypothesized, greater use of political power in decision making becomes the norm within universities, those faculties that can react effectively with the environment will become more powerful. Traditionally such faculties as Science, Health Sciences, Business and certain areas of the Humanities such as Economics, Psychology and Sociology have been able to bridge the gap. It other faculties are to remain competitive in our ever-tightening system they must somehow increase their external interface scores.

Memorandum

Unfortunately, due to vacations, the data for Universities C, D, and E did not arrive before I left for Paris and these are not reported herein.

(W. G. N.)

FIGURE A1 EXTERNAL INTERFACE RELATIONSHIPS - UNIVERSITY A

	INPUTS							CONSTRAINTS								OUTPUTS								
	Budgets	Faculty	Staff	Space	Equipment and Supplies	Grad. Students	Under Grad. Students		Alumni	Funding Groups	Prov. Government	Local Groups	Job Market	Sec. Schools	Professional Groups		Grad. Students	Under Grad. Students	Working Conditions	Public Service	Research	Placement	TOTAL EXT. INT. SCORE	RANK
Arts	1.0	1.4	1.3	.6	.2	1.0	.9		.2	.2	1.0	.3	.2	1.0	.2		.7	.6	1.3	1.6	.3	.2	.13.2	(7)
Bus.	.5	.5	1.0	.5	.4	2.9	.2		1.5	1.6	1.4	1.2	1.8	.2	1.7		3.8	.4	1.9	1.7	1.2	1.8	26.2	(3)
Dents.	.4	.3	.4	.6	1.3	-	.2		.3	.2	1.0	.3	.6	.2	1.3		.1	.1	1.6	1.3	.5	1.6	12.3	(8)
Educ.	.9	.8	1.1	.8	.5	.5	.8		.5	.4	1.2	.8	1.0	1.8	1.5		.1	2.6	1.2	1.3	.5	1.6	19.9	(5)
Eng.	.4	.3	.6	.6	1.1	.6	.5		.7	.6	1.0	.7	.6	.5	1.1		.5	.1	1.5	.8	1.4	.9	14.5	(6)
Law	.2	.2	.2	.4	.1	-	.3		.4	.3	1.0	.4	.7	.2	1.2		-	.4	1.5	1.4	.3	1.2	10.4	(9)
Med.	2.1	2.4	1.8	1.8	2.2	.4	.3		1.2	1.5	1.3	.9	1.1	.3	1.7		.3	.4	1.7	1.3	1.8	1.7	26.2	(3)
Mus.	.3	.3	.3	.4	.7	.1	.3		.3	.2	1.0	.3	.3	.9	.6		.1	.3	1.6	.8	.1	.3	9.2	(11)
Nursing	.2	.2	.2	.4	.5	.1	.2		.5	.2	1.0	.4	.6	.5	1.2		.2	.2	1.4	.9	.3	1.0	10.2	(10)
Science	2.0	1.6	1.6	2.0	2.2	2.1	2.5		.6	1.8	1.1	.8	1.2	1.3	.9		1.5	1.4	1.5	1.0	2.0	.9	30.0	(2)
Soc. Sci.	2.0	2.1	1.5	1.9	.8	2.3	3.8		.5	1.3	1.0	.7	.9	1.1	.9		2.7	3.5	1.8	.9	1.6	.8	32.1	(1)

FIGURE A2 INTERFACE RELATIONSHIPS - UNIVERSITY A

FACULTY TOTAL EXT. INT. SCORE	Arts 13.2	Bus. 26.2	Dents 12.3	Educ. 19.9	Eng. 14.5	Law 10.4	Med. 26.2	Mus. 9.2	Nursing 10.2	Science 30.0	Soc. Sc. 32.1	Total System Interface Score	Rank
FACULTY													
Arts	1			1				1		1	1	104.4	9
Bus.		1		1	1	1				1	1	132.4	4
Dents			1		1		1		1	1		93.2	10
Educ.	1	1		1	1			1	1	1	1	155.3	3
Eng.		1	1	1	1		1			1		129.1	6
Law		1				1					1	68.7	11
Med.			1		1		1		1	1	1	125.3	7
Mus.	1			1				1		1	1	105.2	8
Nursing			1	1			1		1	1	1	130.7	5
Science	1	1	1	1	1		1	1	1	1	1	193.8	1
Soc. Sc.	1	1		1		1	1	1	1	1	1	177.4	2

Note: 1 = substancial and sustained interaction
0 = otherwise
Example: Row 1. The Faculty of Arts sees itself as having interactions with Educ., Medicine, Science, and Social Science.

FIGURE A3 COMMITTEE STRUCTURE - UNIVERSITY A

RANKINGS OF FACULTIES IN TERMS OF REPRESENTATION ON COMMITTEES OVER 9 YEARS

(committee chairmanships have twice the weight of ordinary membership)

	Planning	Budget	Academic Policy
Arts	3	5	2
Bus.	6	3	6
Dents.	11	10	11
Educ.	9	11	8
Eng.	7	7	4
Law	8	8	8
Med.	4	4	7
Mus.	5	6	5
Nursing	10	9	8
Science	1	1	1
Soc. Sci.	2	2	3

Note: Planning = University Development Committee)
Budget = Budget and Finance Committee) of the main legislature governing body of t
Acad. Policy = Admissions & Academic Programs) University (Univ. Senate or Univ. Council)
and Policy Committee)

FIGURE A4 COMPARISON OF FACULTY POWER RANKINGS DETERMINED BY COMMITTEE MEMBERSHIPS AND TOTAL SYSTEM INTERFACE RANKINGS - UNIVERSITY A

Faculty	Total System Interface Rank	Budget Rank	Academic Rank	Planning Rank
Arts	9	5	2	3
Bus.	4	3	6	6
Dents	10	10	11	11
Educ.	3	11	8	9
Eng.	6	7	4	7
Law	11	8	8	8
Med.	7	4	7	4
Mus.	8	6	5	5
Nursing	5	9	8	10
Science	1	1	1	1
Soc. Sci.	2	2	3	2

FIGURE B1 EXTERNAL INTERFACE RELATIONSHIPS - UNIVERSITY B

FACULTY	INPUTS: Budgets	Faculty	Staff	Equip. & Supplies	Grad. Students	Ugrad. Students	Research Revenue	CONSTRAINTS: Alumni	Funding Gps.	Prov. Gov't.	Local Groups	Job Market	Second. Schools	Prof. Gps.	Fac. Unions	Staff Unions	Central Admin.	OUTPUTS: Grad. Students	Ugrad. Students	Working Conditions	Public Service	Placement	Research Publ.	Total Ext. Int. Score	Rank
Agric.	1.0	.6	1.1	2.8	1.5	.4	2.4	1.7	1.0	1.4	1.5	1.6	1.7	1.7	1.8	.6	1.0	1.1	.3	1.7	1.8	1.5	1.5	31.7	2
A & S	3.2	3.6	2.7	2.1	3.7	3.7	2.1	2.0	1.0	.5	1.8	1.5	.2	1.5	1.9	1.9	1.0	3.2	3.5	2.0	1.7	.5	3.4	48.7	1
Comm.	.4	.5	.3	.1	.5	1.1	0	.3	2.0	2.0	.1	1.8	.6	.3	.2	1.8	1.0	.8	.8	1.8	1.8	.3	.2	18.7	8
Dents.	.3	.3	.4	.3	0	.1	0	2.0	1.5	.9	1.9	.5	1.5	.3	1.9	1.9	1.8	0	.1	2.0	1.0	1.2	.2	20.1	7
Educ.	.7	.9	.4	.4	1.6	2.0	.1	.4	.8	.2	1.3	.3	.7	.1	1.0	1.5	1.4	2.7	2.6	1.5	1.7	1.3	.4	24.0	5
Eng.	.9	.8	1.1	1.0	1.4	.9	1.6	1.9	0	0	1.7	1.9	0	0	2.0	2.0	1.2	1.4	.8	2.0	1.5	.3	.7	25.1	4
Law	.2	.2	.1	.1	0	.3	0	1.8	1.0	2.0	1.0	1.9	2.0	.5	0	2.0	0	0	.4	2.0	1.7	.8	.2	18.2	9
Med.	1.7	1.7	1.6	1.0	.6	.4	2.7	1.8	.7	0	2.0	1.9	2.0	1.6	1.2	1.0	1.5	.3	.3	2.0	1.8	1.3	2.1	31.2	3
Nursing	.2	.3	.1	0	0	.3	0	2.0	1.0	.5	.3	1.8	1.9	1.7	.8	.6	1.2	0	.4	2.0	1.7	.6	0	17.4	12
Pharm.	.2	.2	.2	.2	.1	.3	.2	1.0	1.7	1.2	2.0	1.0	1.5	1.0	1.4	1.4	0	0	.3	1.5	1.0	1.2	.3	17.9	11
P. E.	.2	.2	.2	.2	.1	.2	.1	.7	1.5	.5	.4	.3	.7	2.0	2.0	2.0	.4	.2	.2	1.7	2.0	2.0	.3	18.1	10
V. M.	1.1	.8	1.7	2.3	.6	.3	.8	2.0	.5	0	1.0	.7	1.8	.5	1.5	1.4	2.0	.3	.3	2.0	1.9	.2	.7	24.4	5

FIGURE B2 INTERNAL INTERFACE RELATIONSHIPS - UNIVERSITY B

FACULTY	Agric.	A & S	Comm.	Dents.	Educ.	Eng.	Law	Med.	Nursing	Pharm.	P. E.	V. M.	Total System Interface Score	Rank
Total Ext. Int. Score	31.7	48.7	18.7	20.1	24.0	25.1	18.2	31.2	17.4	17.9	18.1	24.4		
FACULTY														
Agric.	4	4	4		3	4	3	3	1	1	4	4	922.3	4
A & S	4	4	4	4	4	4	1	4	4	4	4	4	1127.4	1
Comm.	4	4	4		3	4	4	3	3	3	4	1	937.9	3
Dents.		4	4	4	3	1	4	4	1	3		1	740.2	9
Educ.	3	4	1		4	3	1	3	1		4		681.5	10
Eng.	4	4	4	3	1	4		4			3	3	833.4	7
Law			4	4			4	4	1		1	4	485.9	12
Med.	4	4	1	4	1	4	3	4	4	4	3	4	1017.6	2
Nursing		4	1	1	1			4	4	4	1	1	566.1	11
Pharm.	1	4	3	3	1	1		4	4	4	1	4	773.7	8
P. E.	4	4	4	1	4	1	1	4	1	1	4	3	861.5	6
V. M.	4	4	1	1	1	3	4	4	1	4	1	4	862.0	5

Note:

4 = Substantial and sustained interaction

3 = Occasional interaction which is substantial when it occurs

1 = Minimal (vague awareness and interest in activities of the other Faculty)

0 = None

Example: Row 2. The Faculty of Commerce sees itself as having substantial interactions with Agric. and A & S, none with Dents, occasional interactions with Education, substantial interactions with Engineering, and so on.

Commerce total System Interface Score = 4 x 31.7 + 4 x 48.7 + 3 x 24.0 + ... + 4 x 18.1 + 1 x 24.4 = 863.1

FIGURE B3 COMMITTEE STRUCTURE - UNIVERSITY B

RANKINGS OF FACULTIES IN TERMS OF REPRESENTATION ON COMMITTEES OVER 5 YEARS

(committee charimanships have twice the weight of ordinary membership)

	Exec.		Plan.		Nom.		Budg.		Adm.		F.U.
Agric.	2		6		5		2		6		6
Ars.	1		1		1		1		1		1
Comm.	9		5		8		6		9		9
Dent.	11		9		11		8		9		9
Educ.	6		3		2		4		2		9
Eng.	5		3		3		4		3		3
Law	11		6		8		8		5		9
Med.	4		5		4		2		4		2
Nursing	10		9		10		8		7		6
Pharm.	3		9		6		7		7		3
P.E.	8		9		6		8		9		6
V.M.	7		2		11		8		9		3

Note: F.U. = Faculty Union Executive Committee
Exec. = Executive Committee)
Plan. = Planning Committee)
Nom. = Nominations Committee) of the main legislative governing
Budg. = Budget Committee) body of the University (Univ. Senate or Univ. Council)
Adm. = Admissions Committee)

FIGURE B4 WEIGHTINGS OF COMMITTEES ACCORDING TO THEIR INFLUENCE IN THE DETERMINATION OF 3 TYPES OF POLICY - UNIVERSITY B
(as recommended by the President and Vice-Presidents of University B)

Committee	Budgetary Policy	Academic Policy	Planning Policy
Exec.	6	22	10
Plan.	11	10	25
Nom.	8	11	9
Budg.	30	18	16
Adm.	1	7	1
F.U.	10	2	0

FIGURE B5 COMPARISON OF FACULTY POWER RANKINGS DETERMINED BY COMMITTEE MEMBERSHIPS AND TOTAL SYSTEM INTERFACE RANKINGS - UNIVERSITY B

Faculty	Total System Interface Score*	Budget Score	Academic Score	Planning Score	Total System Interface Rank*	Budget Rank	Academic Rank	Planning Rank
Agric.	795.5	244	249	253	4	4	2	5
A&S	932.6	66	70	61	1	1	1	1
Comm.	863.1	452	525	392	3	8	8	7
Dent.	659.8	592	678	571	9	12	12	12
Educ.	585.5	297	288	219	10	5	5	2
Eng.	733.0	240	272	219	7	3	4	2
Law	413.1	531	587	465	12	10	10	9
Med.	892.8	195	250	237	2	2	3	4
Nursing	496.5	546	625	550	11	11	11	11
Pharm.	702.1	412	403	428	8	6	6	8
P.E.	789.1	504	551	496	6	9	9	10
V.M.	764.4	431	508	356	5	7	7	6

*From Figure B2

A faculty's budget score = $\sum_{\text{6 committees}}$ (faculty's rank on committee). (weighting accorded that committee)

= Exec. rank X6 + Plan. rank X11 + Nom. rank X8 + Budg. rank X30 + Adm. rank X1 + F.U. rank X10

(Rankings from Figure B3 and weightings from Figure B4).

FIGURE F DEFINITIONS OF THE EXTERNAL INTERFACE FACTORS

INPUTS

1. Budgets - cash. The flow of money into the system - both capital and cperating funds.
2. Faculty - professional manpower.
3. Staff - skill, semi-skilled, and unskilled manpower.
4. Space - capital plant - offices, labs, specialized teaching areas.
5. Equipment and Supplies - budgeted amounts.
6. Graduate Students - total graduate enrollment.
7. Undergraduate Students - total undergraduate enrollment.
8. Research Revenue - revenue from outside funding sources.

CONSTRAINTS

1. Alumni - all persons who have attended the university.
2. Funding Groups - all groups providing funds other than the provincial grants.
3. Provincial Government - the Ministries which provide direct funding - usually Ministries of Education, and Colleges and Universities.
4. Local Groups - political or any other groups which interest themselves in university activities and performance.
5. Job Market - any groups or organizations that hire persons educated in the university.
6. Secondary Schools - the educational systems in the secondary schools from which the university's students come.
7. Professional Groups - professional societies or organizations for the various academic disciplines.
8. Faculty Unions or Associations - of the university.
9. Staff Unions or Associations - of the university.
10. Central Administration - of the university. Consists of the President, Vice-Presidents, and various bureaucracies.

FIGURE F (continued)

OUTPUTS

1. Graduate Students - graduate degrees awarded in all fields.
2. Undergraduate Students - undergraduate degrees awarded in all fields.
3. Working Conditions - job protection, income, prestige, work load, perquisites, freedom - the goal of providing and maintaining all of these.
4. Public Service - activities such as faculty service to the government or other public bodies, professional training programs, non-credit programs, cultural and entertainment events, and public facilities.
5. Placement - activities pertaining to the securing the employment of graduates.
6. Research - primarily published papers, books, and articles, but also including other activities of major significance.

FIGURE G CORRELATION OF FOUR RANKINGS OF FACULTY POWER IN UNIVERSITY A

	Total System Interface Rank	Budget Rank	Academic Rank	Planning Rank
Total System Interface Rank	1	.5	.42	.41
Budget Rank		1	.72	.92
Academic Rank			1	.85
Planning Rank				1

CORRELATION OF FOUR RANKINGS OF FACULTY POWER IN UNIVERSITY B

	Total System Interface Rank	Budget Rank	Academic Rank	Planning Rank
Total System Interface Rank	1	.66	.67	.51
Budget Rank		1	.98	.92
Academic Rank			1	.90
Planning Rank				1

REFERENCES

1. Baldridge, J. Victor (1971). Power and Conflict in the University. New York: Wiley.

2. Cohen, M. and March, J. (1974). Leadership and Ambiguity: The American College President. New York: McGraw-Hill.

3. Moodie, G. C. and Eustace, R. (1974). Power and Authority in British Universities. Montreal: McGill-Queen's University Press.

4. Perrow, C. (1970). "Department power and perspective in industrial firms" in Moyer N. Zald (ed) Power in Organizations: 58-89, Nashville: Vanderbilt University Press.

5. Pfeffer, J. and Salancik, G. R. (1974). "Organizational Decision Making as a Political Process: The Case of a University Budget", Administrative Science Quarterly, 19 #2: 135-151.

6. Rice, A. K. (1970). The Modern University, A Model Organization. London: Tavistock Publications.

7. Richman, B. M. and Farmer, R. N. (1974). Leadership, Goals and Power in Higher Education. San Francisco: Jossey-Boss